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October 1, 2010

John Tindall, P.E.
Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

Subject: City of Plummer Wastewater Treatment Plant Biosolids Management Plan Addendum Submittal for Approval

Dear Mr. Tindall:

Based on your comments below, we are providing this letter as an addendum to the 2009 Biosolids Management Plan. This addendum is necessary primarily because we now have a defined method of biosolids removal and application. We look forward to your speedy review and approval. I have reprinted your comments from your email of September 30, 2010 in normal font with our responses in *italics*.

1. Provide the basis for the calculations of the metals concentrations on a dry weight basis. If the metals concentrations are less than Table 3, the cumulative loading rates will not matter. The raw data needs to be compiled so that I can tell how concentrations were calculated. In reviewing the table on pg. 3, some of the dry weight concentrations in the 3rd column (I'm assuming these are dry weight) do not make sense. *We have recompiled Table 1 from page 3 as shown below. I have attached a copy of the Excel spreadsheet for your review as well. The note at the bottom of Table 1 explains the calculation methodology. As you can see, the corrected values are less than those originally reported; therefore, as you suggest, the loading rates will not matter.*

Table 1
40 CFR Part 503 Land Application Pollutant Limits

Pollutant	Ceiling Concentration Limits For All Biosolids Applied to Land, mg/kg	Sampled Sludge concentrations, mg/kg	Existing Lagoon Estimated application concentration, mg/kg**	Projected Annual Estimated application concentration, mg/kg	No. of years capacity at projected annual appl. Conc.
Arsenic	75	0.039	0.0002	ND	>100
Cadmium	85	ND*	ND	ND	>100
Chromium	3,000	0.372	0.0017	0.0001	>100
Copper	4,300	4.03	0.0181	0.0014	>100


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Lead	840	0.891	0.0040	0.0003	>100
Mercury	57	0.019	0.0001	ND	>100
Molybdenum	75	ND*	ND	ND	>100
Nickel	420	0.270	0.0012	0.0001	>100
Selenium	100	ND*	ND	ND	>100
Zinc	7,500	11.26	0.0505	0.0039	>100

*No Detection

**Assumes 0.5 ft soil mixing depth over entire 27 acres. Calculation: multiply sampled concentration by total estimated mass of biosolids to derive total mass of pollutant. Divide total mass of pollutant by total mass of soil of incorporation, with soil unit weight of 93.6 lb/cu ft. Applied Conc = (Sample conc x total biosolid mass)/(total soil mass) Example, Cr: (0.37 mg/kg/2.203 lb/kg x 247,133 lb solids)/(0.1524 m x 1500.7 kg/m3 x 10.93 hectare x 100^2 m2/hectare) = 0.00167 mg/kg mixed concentration of chromium in soil.

2. The pathogen reduction calculations need to be presented. *Pathogen reduction calculations were performed. I have attached the spreadsheet printout demonstrating that fecal coliform counts in the sludge have a geometric mean of less than 2 x 10^6 colony-forming organisms per 100 ml of sample. Also, the same spreadsheet file used in (1) includes the pathogen reduction tab.*

3. The method being used for meeting the vector attraction reduction needs to be stated. *The vector attraction reduction method used is Option 9, "Sewage sludge shall be injected below the surface of the land", in accordance with 40 CFR Part 503.33.b.9*

4. For the nitrogen loading rates, the plant available nitrogen in the soil needs to be shown in the calculation of the over-all N loading rates for the crop. *Table 2 has been added as shown below.*

Table 2
40 CFR Part 503 Land Application Nitrogen Limit

Pollutant	Ceiling Concentration Limits For All Biosolids Applied to Land, lb/ac	Sampled Sludge concentrations, mg/kg	Existing Lagoon Estimated application concentration, mg/kg**	Projected Annual Estimated application concentration, mg/kg	No. of years capacity at projected annual appl. Conc.
TKN	124	347	1.56	0.120	>100

**Assumes 0.5 ft soil mixing depth over entire 27 acres.

If you have any further questions, please let me know. I have forwarded the "Notice and Necessary Information Part 1 to CNI to forward on to their sludge removal subcontractor, Fire Mountain Farms. I am preparing Part 2 to send to the City for their review and signature. I look forward to hearing from you soon, via phone, email (agay@uskh.com) or letter.

Sincerely,
USKH Inc.

Alan E. Gay, P.E.
Project Manger

Attachment: Pathogen Reduction Spreadsheet
1057200 Sludge Volumes.xls (via email to Mr. Tindall only)

c: Mayor Tim Clark, City of Plummer, P.O. Box B, Plummer, Idaho 83851
Scott Fields, Coeur d'Alene Tribe, P.O. Box 408, Plummer, ID 83851 (with attachments)
Jim Kackman, Director of Public Works, Coeur d'Alene Tribe, P.O. Box 408, Plummer, ID 83851
Susan Poulsom, EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101
Jeff Beeman, USDA Rural Development, 7830 Meadowlark Way, Suite C3, Coeur d'Alene, ID 83815

Work Order: 1057200

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